

## **REMARKS**

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter which applicant regards as the invention.

The Examiner indicated that claims 6-10 contain allowable subject matter. Applicant acknowledges the allowance of claims 6-10.

The Examiner rejected claims 1-5 under 35 U.S.C. 102(e) as being anticipated by Inoue et al., U.S. Pat. Pub. No. 2002/0122970. The Examiner's rejection is traversed for the following reason.

In regards to claim 1, claim 1 has been amended to further differentiate the present invention over the prior art. Specifically, "peripheral" has been replaced with "frame" and "consists of" has been replaced with "is made from." Thus, Applicant discloses a fuel cell separator 10 that has a metal central part 22, a frame part 30 surrounding the metal central part 22 and an elastic member 40 that connects the peripheral part 30 to the metal central part 22. The entire frame part 30 is made from a resin. The frame part 30 defines a reaction gas passage 13, which guides the reaction gases (hydrogen and oxygen) to the metal central part 22. The frame part 30 further defines a reaction product passage 14, which guides a reaction product (H<sub>2</sub>O) produced at the metal central part 22 to the reaction product passage 14. As required by claim 1, the reaction gas passage 13 and the reaction product passage 14 (hereinafter referred to collectively as "passages") are defined in the frame part 30 of the separator. Further, paragraphs [0002] through [0013] of the present application disclose that a separator

with a metal frame is prone to corrosion where the reaction gasses (hydrogen and oxygen) and the reaction product ( $H_2O$ ) pass through the passages. Thus, as disclosed in paragraph [0015] of the present invention, the purpose of a separator with a resin frame part is to prevent the frame of the separator from corroding.

In addition, as disclosed in paragraph [0018] of the present application, the presence of the elastic member prevents metal deformation of the metal central part and/or fatigue failure of the resin frame. Because the metal central part and the resin frame have different thermal expansion coefficients, if the two were directly connected the metal central part may deform or the resin may fail due to fatigue from the differential in thermal expansion. The deformation and fatigue failure is prevented by the presence of the elastic member because the elastic member can absorb the difference in thermal expansion between the metal central part and the resin frame part.

In his rejection of claims 1-5 the Examiner stated that Inoue teaches a fuel cell separator 14 having a metallic central portion 14a connected to an elastic member 41, 42, which is connected to a resin member 43, 44 that forms a peripheral portion. Thus, the Examiner contends that the portion of the separator represented by reference numbers 43 and 44 is a resin peripheral portion. Inoue discloses a method for fabricating a seal-integrated separator whereby the separator includes a separator body made of stainless steel. Accordingly, Inoue does not teach all the features of amended claim 1. More specifically, Inoue does not teach "a frame part that surrounds the central part...wherein...the frame part is made from a resin member."

Referring to paragraph [0086] and to FIG. 1 of Inoue, Inoue discloses a cathode side separator 14 and an anode side separator 16. Inoue expressly states that the separators 14, 16 are stamped plates made from stainless steel. The

stainless steel separators 14, 16 include a central corrugated portion 32, 33 and plane portions 34, 35, which are located on the periphery of the plates outside the corrugated portions 32, 33. Multiple communication ports (or passages) 61a-63c and 61b-63b are defined in the plane portions 34, 35 of the separator 14, 16. Thus, the plane portions 34, 35 of the separator 14, 16 are considered to be the peripheral part (or frame part) since the passages 61a-63c and 61b-63b are defined in this portion, which is a requirement of amended claim 1. Inoue further discloses a resin inner seal and a resin outer seal that simply provide a seal around the communication ports (or passages) 61a-63c and 61b-63b. The inner seal includes a first seal 41 and a second seal 42 located on the top and bottom surfaces respectively of an outer most groove 30a. The outer seal includes a third seal 43 and a fourth seal 44 located on the top and bottom surfaces respectively of the plane portion 34.

Thus, as mentioned above, the entire separator 14, 16, including the central portion 32, 33 and the plane peripheral portion (frame part) 34, 35, is made from stainless steel. Only part of the peripheral portion and not the entire peripheral portion contains resin, which are the inner and outer seals. Whereas, in the present invention the entire peripheral portion (frame part) is made of resin.

Further, the Examiner stated in Section 5 of the Office action that in claim 1 the language of "consists of" is not sufficient to distinguish over Inoue. The Examiner further stated that "peripheral part" is broadly construed as the outer portion of the separator, which may contain one or more frame parts. As mentioned above, Applicant notes that claim 1 has been amended to further differentiate the present invention over Inoue by replacing "consists of" and "peripheral."

Based on the foregoing, it is apparent that Inoue does not teach or suggest all the features of amended claim 1 and therefore cannot be cited as anticipating amended claim 1. More specifically, Inoue does not disclose, teach or suggest a separator having a resin frame part.

Claims 2-5 depend either directly or indirectly on claim 1, thus, all arguments pertaining to claim 1 are equally applicable to these claims and are herein incorporated by reference.

The Examiner provisionally rejected claims 1-10 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 7-25 of co-pending Application No. 10/352,958 (2003/0143451). In response to the provisional rejection, Applicant will file a terminal disclaimer if and when necessary.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. SHM-15712.

Respectfully submitted,

RANKIN, HILL & CLARK LLP

By /Ronald S. Nolan/  
Ronald S. Nolan, Reg. No. 59271  
Patent Agent

38210 Glenn Avenue  
Willoughby, Ohio 44094-7808  
(216) 566-9700